Date: September 11, 2007

To: Chair Golding and Blue Ribbon Task Force Members

From: Dr. Satie Airamé, UC Santa Barbara
Dr. Kirsten Grorud-Colvert, Oregon State University
Dr. Ben Halpern, UC Santa Barbara
Dr. Sarah Lester, UC Santa Cruz

Re: Proposed edits to the April, 2007 Draft Master Plan

Dear Chair Golding and Blue Ribbon Task Force Members:

Thank you for the opportunity to comment on the proposed edits to the April, 2007 Draft Master Plan. We, the undersigned, are academic scientists who have actively researched the effects of marine reserves and are in the process of completing an international synthesis of 153 published, peer-reviewed scientific publications that demonstrate on the ecological effects of 124 marine reserves worldwide. We would like to address the suggested changes to remove the term "marine reserves" in the Introduction (Section 1), under the sub-heading "Marine Protected Areas Generally", on pages 11 and 12.

There are differences between the ecological, economic, and social effects of fully protected no-take marine reserves[1] and other types of marine protected areas (MPAs) that allow some fishing. It is inaccurate to report that the benefits and impacts of no-take marine reserves are equivalent to the benefits and impacts of other types of MPAs. In some cases, it may appropriate to broaden the discussion from fully-protected "marine reserves" to "marine protected areas," as described in the NRC 2001 report *Marine protected areas: Tools for sustaining ocean ecosystems*. However, some of the references cited to support general statements about MPAs in the proposed edits to the April, 2007 Draft Master Plan are specifically about fully protected, no-take marine reserves, and their conclusions do not generally apply to MPAs.

Below are specific places in the document for which the substitution of "marine protected areas" for "marine reserves" is not appropriate.

(1) Empirical evidence and inferences from models reported in the review of MPAs by the National Research Council in its 2001 report, *Marine protected areas: Tools for sustaining ocean ecosystems*, are based primarily on scientific publications about fully protected, no-take marine reserves. The conclusions about empirical effects of no-take marine reserves on abundance, body size, biomass, diversity, and reproductive capacity are virtually all derived from papers about fully protected, no-take marine reserves (24 out of 26 cited references in this section of the NRC 2001 report are about no-take marine reserves). Effects of other, less protective types of MPAs are more difficult to determine, although some empirical and modeling studies have been done (see 3 below).

(2) The suggested revised language on page 11 (second to last paragraph) of the MLPA Master Plan states: "Since the National Academy of Sciences report, a vigorous

[1] This characterization of marine reserves is equivalent to the definition of marine reserves in California state code 36700(a)PRC and 36710(a)PRC.

discussion among scientists and decision makers has explored the benefits and costs of MPAs (Nowlis and Friedlander 2004; Hilborn et al. 2004; SSC 2004; NFCC 2004; FAO 2004). Many of these discussions have focused upon the use of MPAs as a fisheries management tool and on the effect of MPA designation on fishing operations, fisheries management, and fish populations outside MPAs". Although some of the scientific discourse has been about the role of MPAs as a fisheries management tool, most of the scientific literature focuses on fully protected, no-take marine reserves and their ecological effects. It is evident that the growing body of scientific literature (e.g. Halpern 2003, Palumbi 2003, and Lester et al., in review) documents primarily the ecological impacts (not fishery impacts) of no-take marine reserves (not MPAs of varying levels of protection). For example, two of the papers cited to support the preceding quote from the revised Master Plan (Nowlis and Friedlander 2004, and Hilborn et al. 2004) address fully protected, no-take reserves, not MPAs in general. These references are no longer appropriate support for the preceding statement if "marine protected areas" replace the term "marine reserves".

(3) The suggested revised language on page 11 (second to last paragraph) of the MLPA Master Plan states: "There has been little direct comparison of the relative benefits of no-take reserves compared to marine parks and marine conservation areas." It is important to note that some research has been conducted to compare the effects of fully protected, no-take marine reserves and other types of MPAs that allow limited fishing. Examples of published studies include:

a. Dry Tortugas, Florida (Ault, JS et al. 2006. Bulletin Marine Science 78:633-654);
b. Kisite Marine Reserve, Kenya (McClanahan TR, et al. 2006. Aquatic Conservation 16:147-165);
c. Lobsters in New Zealand (Shears, NT, et al. 2006. Biological Conservation 132: 222-231.)
d. Rockfish assemblages in California (Schroeder and Love. CalCOFI Rep., Vol. 43, 2002)

From our review of the scientific literature, it is clear that there are often ecological and socioeconomic differences between fully protected, no-take marine reserves and other types of MPAs that allow limited fishing. We urge the authors of the revised Master Plan to carefully consider the sources of information cited in the document and make sure that they provide statements that reflect the information in the cited references. If the authors wish to expand the discussion to include all types of MPAs, then we recommend that reference materials are reviewed and suitable references are found in support of the assertions in the document.

We are happy to discuss this with you further, or provide the papers cited above, if you have any questions.

Sincerely,

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